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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,514

05/12/2006

Taiga Goto

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6551

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EXAMINER

WERNER, BRIAN P

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

11/23/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,514	Applicant(s) GOTO ET AL.	
	Examiner BRIAN P. WERNER	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 10-13, 16, 17 and 20-27 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9, 15 and 19 is/are allowed.
- 6) ☒ Claim(s) 1-6, 14 and 18 is/are rejected.
- 7) ☐ Claim(s) 7, 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/12/2006, 9/21/2006, 9/16/2008, 11/11/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group I (claims 1-9, 14, 15, 18 and 19) in the reply filed on October 19, 2010 is acknowledged. Claims 10-13, 16, 17 and 20-27 are withdrawn from further consideration. Applicant's request for reconsideration of the requirement for restriction is acknowledged. Should a lack of burden be evident following the prior art search, the restriction will be partially or fully withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 14 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hitoshi (JP 2001-252263 B1 – cited by applicant, machine translation provided by examiner).

Regarding claims 1, Hitoshi discloses an image processing method and apparatus (figures 1 and 5, and paragraph 0093), comprising:

an inputting step of inputting an image data which is obtained by imaging a subject for as predetermined period of time with a medical imaging apparatus and is arranged in time series (figure 5);

an extracting along a time axis step of extracting pixels which satisfy a predetermined condition along a time axis from all the pixels arranged in time series for each pixel coordinate position with respect to each pixel in the image data ("maximum projection" of the "intermediate" images to form a "final" image as described at paragraph 0093, and depicted in figure 5; ***a "maximum projection" is often referred to as a "maximum intensity projection" in the art, and it is well known in the art to be a process where given a series of images corresponding to one another, only the maximum intensity of a single pixel within the set of images is the intensity that is ultimately projected or displayed***); and

a constructing step of constructing a two-dimensional or three-dimensional image based on the pixels extracted along the time axis in the extracting along the time axis step ("display" at paragraph 0093, and figure 5(d)).

Regarding claims 2-4, the limitations therein are anticipated by the "maximum projection" disclosed by Hitoshi.

4. Claims 1, 6, 14 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Prince et al. (US 7,545,967 B1).

Regarding claims 1, 6, 14 and 18, Prince discloses an image processing method and apparatus, comprising:

an inputting step of inputting an image data which is obtained by imaging a subject for as predetermined period of time with a medical imaging apparatus and is arranged in time series ("series of images acquired ..." at column 4, line 8);

an extracting along a time axis step of extracting pixels which satisfy a predetermined condition along a time axis from all the pixels arranged in time series for each pixel coordinate position with respect to each pixel in the image data ("final image" at column 14, line 59; "selecting images" at steps i and ii at column 14, lines 64-67, "for each pixel ..." at column 15, line 1); and

a constructing step of constructing a two-dimensional or three-dimensional image based on the pixels extracted along the time axis in the extracting along the time axis step ("both 2D and 3D" at column 9, line 59).

5. Claims 1, 2, 4, 5, 14 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Yasuto et al. (JP 11-137552 – English machine translation provided by examiner).

Regarding claims 1 and 14, Yasuto discloses an image processing method and apparatus, comprising:

an inputting step of inputting an image data which is obtained by imaging a subject for as predetermined period of time with a medical imaging apparatus and is arranged in time series (figure 3);

an extracting along a time axis step of extracting pixels which satisfy a predetermined condition along a time axis from all the pixels arranged in time series for each pixel coordinate position with respect to each pixel in the image data (figures 9 and 10; see paragraph 0044-0047 of the machine translation); and

a constructing step of constructing a two-dimensional or three-dimensional image based on the pixels extracted along the time axis in the extracting along the time axis step (figures 9(d) or 10(d)).

Regarding claim 2, a region of interest is set as depicted in figures 9 and 10.

Regarding claims 4 and 5, pixels of successive time series images show the arrival of contrast are superimposed as depicted in figures 9 and 10. Only selected images are used as depicted in figure 6, "T1".

Allowable Subject Matter

6. Claims 9, 15 and 19 are allowed. The prior art does not teach or suggest the combination of the claimed "contrast medium", "maximum value pixel" and "minimum value pixel", and "different operation step".

7. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach or suggest the limitations recited in claim 7, including the "different operation step".

Summary of Claim Status

- 1 (102 – Prince)(102 – Yasuto)(102 – Hitoshi)
- 2 (102 – Yasuto) (102 – Hitoshi)
- 3 (102 – Hitoshi)
- 4 (102 – Yasuto) (102 – Hitoshi)
- 5 (102 – Yasuto)
- 6 (102 – Prince)
- 7 (objected to)
- 8 (objected to)
- 9 (Allowed)
- 10 (non-elected)
- 11 (non-elected)
- 12 (non-elected)
- 13 (non-elected)
- 14 (102 – Prince) (102 – Yasuto) (102 – Hitoshi)
- 15 (Allowed)
- 16 (non-elected)
- 17 (non-elected)
- 18 (102 – Prince)(102 – Yasuto) (102 – Hitoshi)
- 19 (Allowed)
- 20 (non-elected)
- 21 (non-elected)
- 22 (non-elected)
- 23 (non-elected)
- 24 (non-elected)
- 25 (non-elected)
- 26 (non-elected)
- 27 (non-elected)

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN P. WERNER whose telephone number is (571)272-7401. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian P. Werner
Primary Examiner
Art Unit 2624

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